MONTHLY WEATHER REVIEW.

Acting Editor: ALFRED J. HENRY.

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INTRODUCTION.

The REVIEW for March, 1896, is based on 2,726 reports from stations occupied by regular and voluntary observers, classified as follows: 149 from Weather Bureau stations; 33 from U. S. Army post surgeons; 2,404 from voluntary observers; 32 from Canadian stations; 1 from Hawaii; 96 received through the Southern Pacific Railway Company; 11 from U. S. Life-Saving stations. International simultaneous observations are received from a few stations and used together with trustworthy newspaper extracts and special reports.

The WEATHER REVIEW is prepared under the general editorial supervision of Prof. Cleveland Abbe. Unless otherwise specifically noted, the text is written by the Editor, but the statistical tables are furnished by Mr. A. J. Henry, Chief of the Division of Records and Meteorological Data, who has also acted as Editor during the present month. Special acknowledgment is made of the hearty cooperation of Prof. R. F. Stupart, Director of the Meteorological Service of the Dominion of Canada, Mr. Curtis J. Lyons, Meteorologist to the Government Survey, Honolulu, and of Dr. Mariano Bárcena, Director of the Central Meteorological Observatory of Mexico.

CLIMATOLOGY OF THE MONTH.

GENERAL CHARACTERISTICS.

The month of March was characterized by an excess of pressure and a deficiency of temperature over the interior of the country. The precipitation was above the normal in New England and the southern Pacific Slope, and especially so in North Dakota and the northern Slope. It was below the normal in the South Atlantic States, and especially so in the southern Pacific Slope Region. Severe rainstorms prevailed in New England and central New York in the early part of the month, followed by heavy floods in the rivers.

ATMOSPHERIC PRESSURE.

[In inches and hundredths.]

The distribution of mean atmospheric pressure reduced to sea level, as shown by mercurial barometers, not reduced to standard gravity, and as determined from observations taken daily at 8 a. m. and 8 p. m. (seventy-fifth meridian time), is shown by isobars on Chart IV. That portion of the reduction to standard gravity that depends on latitude is shown by the numbers printed on the right-hand border.

The *mean pressures* during the current month were high over a ridge extending from Athabasca and Manitoba southeastward to Georgia. The highest were: Helena, 30.15; Bismarck, 30.14; North Platte, Mobile, Atlanta, Savannah, and Charleston, 30.13. The mean pressures were low in Arizona, and lowest in the Gulf of St. Lawrence. The lowest were: Charlottetown, 29.81; Chatham, 29.82; Eastport and Yarmouth, 29.83; Sydney, 29.84; Father Point, 29.85; Portland, Me., 29.86.

As compared with the normal for March, the mean pressure was in excess over the lower Lakes, the Mississippi, and the South Atlantic States. It was deficient in New Brunswick, southern California, and Arizona. The greatest excesses were: Toledo, 0.08; Indianapolis, 0.07; St. Johns, N. F., Buffalo, Erie, Detroit, Columbus, Ohio, Cincinnati, Spokane, and Charleston, 0.06. The greatest deficits were: Nantucket, 0.10; Chatham, 0.08; Quebec and Portland, Me., 0.06; Father Point, Yarmouth, Yuma, and San Diego, 0.05.

As compared with the preceding month of February, the pressures reduced to sea level show a decided rise throughout the Mississippi and Missouri valleys, Alberta, and eastward to the Atlantic; but a decided fall on the Pacific Coast and Rocky Mountain Plateau. The greatest rises were: St. Johns, N. F., 0.28; White River and Saugeen, 0.19; Alpena, 0.18; Sault Ste. Marie and Toronto, 0.17; Port Stanley, Parry Sound, Buffalo, and Marquette, 0.16. The greatest falls were: Roseburg, 0.18; Salt Lake City and Eureka, 0.17; Winnemucca and Carson City, 0.16; Redbluff and Elpaso, 0.14.

AREAS OF HIGH AND LOW PRESSURE.

By Prof. H. A. HAZEN.

During the month eight highs and ten lows have been definitely outlined on Charts I and II. The principal facts regarding the origin and disappearance, the continuance and velocity of these highs and lows are given in the accompanying table. While we speak of the motion of these highs and lows as of definite traveling conditions in the atmosphere, it should be noted that in no sense are we to suppose that there is a transport of columns or of masses of air from one region to another. It is well known that the velocity of the current increases markedly as one rises in the atmosphere and at about 6,000 feet, this velocity is about double that at the earth's surface. Moreover, it is also known that the direction of the current at 6,000 feet is often at right angles to the trajectory of the high or low. The cause of the apparent motion of highs and lows as they appear on our weather maps, has never been ascertained, but it is becoming quite common now to regard these conditions as in the nature of enormous waves in the atmosphere in which there is no motion of the air bodily in any direction. The following is a short description of the highs and lows noted during the month: